

IN THE CLAIMS

Listing of the Claims

1. – 12. (Canceled)

13. (Previously Presented) A system for directing a data message in a hybrid communications network, including a first wireless system and a second wireless system, the system comprising:

a central database sending update information to update a user profile in the first wireless system in response to service for a mobile station being transferred from the first wireless system to the second wireless system, the user profile being updated to indicate that data messaging services are being provided to the mobile station by the second wireless system; and

a service node for directing a data message for a mobile station through the second wireless system, as facilitated by the updated user profile, to deliver the data message to the mobile station during its operation on the second wireless system.

14. (Canceled)

15. (Previously Presented) The system according to claim 13 further comprising an authenticator for authenticating the mobile station during or after the transfer from the first wireless system to the second wireless system.

16. (Previously Presented) The system according to claim 13, wherein
the first wireless system is a public wireless system, and
the central database is configured to receive and store a signaling message containing deregistration information from the first wireless system,

the deregistration information including at least one of a mobile switching center identifier and a cell identifier.

17. (Previously Presented) The system according to claim 13, wherein
the second wireless system is a private wireless system, which is assigned a private system identifier number based on a geographic location of the private wireless system, and

the central database is configured to receive and store a signaling message containing registration information from the second wireless system, the registration information including the private system identifier.

18. (Previously Presented) The system according to claim 13, wherein
the second wireless system is a private wireless system that includes a private branch exchange for assigning a private system identifier for the private wireless system based on geographic coordinates of the mobile station within the private wireless system, and

the central database is configured to receive and store a signaling message containing registration information from the second wireless system, the registration information including the private system identifier.

19. (Currently Amended) The system according to claim 13 further comprising a service control point for maintaining the user profiles ~~stored in the central database.~~

20. – 24. (Canceled)

25. (Withdrawn) A method for reducing inter-system signaling between wireless communication systems; the method comprising:

roaming from a first coverage area of a first wireless system to a second coverage area of a second wireless system;

updating a first home location register of the first wireless system with a location update message and an active address of the second wireless data server from a second visitor location register of the second wireless data network;

transferring a mobile data profile of the mobile station from a first wireless data server to a second wireless data server in response to the location update message;

serving a visiting mobile station in the second wireless coverage area via the second wireless data server, as opposed to a first wireless data server of the first coverage area, to reduce inter-system signaling messages sent between the first wireless system and the second wireless system.

26. (Withdrawn) The method according to claim 25 further comprising the steps of:

allocating memory in the second wireless data server for storing the mobile data profile.

27. (Withdrawn) The method according to claim 25 wherein the transferring step further comprises the step of:

transferring a mobile data profile of the mobile station from the first wireless data server to the second wireless data server via a first mobile switching center, a public switched telephone network, and a second mobile switching center.

28. (Withdrawn) The method according to claim 25 wherein the transferring step further comprises the steps of transferring a mobile data profile from a first wireless data server to a second wireless data server over a communications network.

29. (Withdrawn) The method according to claim 28 wherein the transferring step is accomplished by transmission over the internet as the communications network.

30. (Withdrawn) The method according to claim 25 further comprising the step of:

 adding a field to a database in first home location register and the second visitor location register to support storage of the active address.

31. (Withdrawn) The method according to claim 25 further comprising the step of:

 appending the active address to a location update message transmitted from the first home location register to the second visitor location register.

32. (Previously Presented) A method of managing data messages, comprising:

 sending deregistration data from a first wireless system to a central database based on a mobile station transferring from the first wireless system to a second wireless system, the central database being a database for indicating which wireless system provides data messaging services for the mobile station;

 receiving update information for the mobile station from the central database, the update information including an identifier of the second wireless system; and

 updating a user profile of the mobile station in at least one of a home location register and a visitor location register based on the received update information, the user profile being updated to indicate that the second wireless system provides data messaging services to the mobile station.

33. (Previously Presented) The method of claim 32, further comprising:
sending the identifier of the second wireless system to a service node in response to the service node querying the home location register, the service node using the identifier to redirect a data message to the mobile station.
34. (Previously Presented) The method of claim 32, wherein the step of sending deregistration data includes sending a signaling message to the central database during or after the transferring of the mobile station, the signaling message including a mobile identifier and information identifying the first wireless system.
35. (Previously Presented) The method of claim 34, wherein
the first wireless system is a public wireless system, and
the step of sending deregistration data includes sending at least one of a mobile switching center identifier and a cell identifier as the information identifying the first wireless system.
36. (Previously Presented) The method of claim 32, further comprising:
cooperating, at the first wireless system, with the second wireless system to transfer service to the second wireless system, if a signal parameter measured at the mobile station satisfies a first transfer condition.
37. (Previously Presented) The method of claim 36, further comprising:
cooperating, at the first wireless system, with the second wireless system to transfer service back to the first wireless system, if the signal parameter measured at the mobile station satisfies a second transfer condition.
38. (Currently Amended) A method of managing data messages, comprising:
sending registration data from a first wireless system to a central database based on a mobile station transferring from a second wireless system

to the first wireless system, the central database being a database for updating a user profile in at least the second wireless system which wireless system provides data messaging services for the mobile station; and

receiving a data message for the mobile station from a service node, the service node ~~that directs~~ directing the data message based on the updated user profile in the second wireless system.

39. (Previously Presented) The method of claim 38, further comprising:
sending the received data message to the mobile station.

40. (Previously Presented) The method of claim 38, wherein the step of sending registration data includes sending a signaling message to the central database during or after the transferring of the mobile station, the signaling message including a mobile identifier and information identifying the first wireless system.

41. (Previously Presented) The method of claim 40, wherein
the first wireless system is a private wireless system, and
the step of sending registration data includes sending a private system identifier as the information identifying the first wireless system, the private system identifier being assigned based on a geographic location within the coverage area of the first wireless system.

42. (Previously Presented) The method of claim 38, further comprising the step of:

cooperating, at the first wireless system, with the second wireless system to transfer service to the first wireless system, if a signal parameter measured at the mobile station satisfies a first transfer condition.

43. (Previously Presented) The method of claim 42, further comprising the step of:

cooperating, at the first wireless system, with the second wireless system to transfer service back to the second wireless system, if the signal parameter measured at the mobile station satisfies a second transfer condition.

44. (Previously Presented) A method of managing data messages, comprising:

receiving information based on a mobile station transferring from a first wireless system to a second wireless system, the received information including at least one of deregistration data from the first wireless system and registration data from the second wireless system;

updating a central database based on the received information, the central database being a database for indicating which wireless system provides data messaging services for the mobile station; and

sending update information to the first wireless system, the update information being used by the first wireless system to update a user profile of the mobile station in at least one of a home location register and a visitor location register to indicate that the second wireless system provides data messaging services to the mobile station.

45. (Previously Presented) The method of claim 44, further comprising:

receiving at a service node a data message for the mobile station;

querying the first wireless system based on the received data message;

receiving an indication from the first wireless system that the second wireless system is providing data messaging services to the mobile station; and

directing a data message for the mobile station from the service node to the second wireless system.

46. (Previously Presented) The method of claim 45, further comprising the steps of:

sending the received information from the central database to the service node, the received information indicating to the service node that the first wireless system should be queried in response to receiving a data message; and
updating an activity status database for the mobile station at the service node based on the received information.

47. (Previously Presented) The method of claim 44, further comprising:
receiving at a service node a data message for the mobile station;
querying the central database based on the received data message;
receiving an indication from the central database that the second wireless system is providing data messaging services to the mobile station; and
directing a data message for the mobile station from the service node to the second wireless system.